
ANNUAL REPORT ON THE ENVIRONMENT

CHAPTER III

**ECOLOGICAL
RESOURCES**

III. ECOLOGICAL RESOURCES

This chapter summarizes the status of ecological resources and the actions of public agencies and citizen groups in the management and preservation of these resources.

A. ISSUES AND OVERVIEW

Open space and natural habitat continue to be reduced in Fairfax County, primarily as a result of housing, commercial development and road building. As this resource is reduced, increased emphasis must be placed on protecting, preserving, and enhancing the remaining open space and natural habitat in Fairfax County.

Fairfax County needs to undertake stronger efforts in order to protect, preserve, and enhance the environmentally sensitive open space in the County. These efforts include the establishment of a Countywide Natural Resource Inventory, followed by a Countywide Natural Resource Management Plan. Additionally, the County needs an aggressive program seeking easements on privately owned environmentally sensitive land. The cooperation between Fairfax County and the Northern Virginia Conservation Trust is starting to address this last issue.

EQAC commends Fairfax ReLeaf, and their volunteers, in their reforestation efforts. EQAC also commends the Fairfax County Park Authority staff in their efforts toward a building a Countywide Baseline Natural Resource Inventory. EQAC supports the Fairfax County Park Authority in their work toward a Countywide Natural Resource Management Plan.

EQAC also commends the Northern Virginia Soil and Water Conservation District for their leadership in a number of activities that will lead to better management of stormwater and protection of stream valleys. Additionally, EQAC commends the Northern Virginia Conservation Trust for pursuing and obtaining easements on privately owned environmentally sensitive land.

B. PROGRAMS, PROJECTS, AND ANALYSES

1. Gypsy Moth Program (and Fall Cankerworm)

The Gypsy Moth Program came under the supervision of the Urban Forestry Branch Chief in December, 1996. This program contains eight positions. In June, 1997, the Gypsy Moth Program office moved from the Government Center building to the Herrity Building.

The gypsy moth was first detected in Fairfax County in 1981. The Board of Supervisors enacted an Integrated Pest Management (IPM) Program to control the gypsy moth, *i.e.*, reduce gypsy moth populations below defoliating levels. The goal of the program is to minimize the environmental and economic impacts of the pest by limiting the amount of tree mortality and use of pesticides in the environment. Each year, the following control methods are considered:

- **Mechanical:** The gypsy moth egg mass Search, Scrape, and Destroy Campaign and Burlap Banding for Gypsy Moth Caterpillars. These are citizen involvement programs.
- **Biological:** Release and monitoring of gypsy moth parasites and pathogens, and aerial and ground applications of *Bacillus Thuringiensis* (Bt).
- **Chemical:** Aerial and ground applications of Diflubenzuron on high infestations.
- **Educational:** Self-help program and lectures to civic associations and other groups.

Citizens are encouraged to destroy egg masses and caterpillars found on their properties. Band trees with burlap strips to trap caterpillars. Destroy egg masses by scraping the masses into a container of soapy water.

Gypsy moth caterpillar populations increased significantly in 2001 compared to the previous five years. Whether this is a sign that populations will reach outbreak proportions in the near future, or if they will stay at moderate levels, cannot be determined at this time.

Egg mass surveys conducted by the Gypsy Moth Program staff in the fall of 2000 indicated that 1,700 acres in twelve areas of the County had gypsy moth infestations that warranted aerial treatment. Most of the treatment areas were located north of Route 66. In addition to the aerial treatment areas, there were 80 acres in isolated areas that warranted ground treatment. The pesticide used was *Bacillus Thuringiensis*.

The Lake Barcroft Watershed Improvement District reports a significant increase in gypsy moth infestations in Lake Barcroft. Egg mass density increased from 4.8 per acre in 2000 to 42.8 per acre that will hatch in 2001. The density of larvae under burlap bands increased from an average of 1.4 observed last year to 11.0 this year.

While gypsy moth populations have increased, there was no detected defoliation by the gypsy moth in Fairfax County in 2000. However, the Virginia Department of Agriculture and Consumer Services reported 70,000 acres of defoliation elsewhere in the state.

The fall cankerworm, *Alsophila pometaria*, is a defoliating insect found throughout much of North America. This insect is native to the United States and feeds on a

broader range of trees than the gypsy moth. The caterpillar stage of this insect, often referred to as inchworms or loopers, feeds in the spring and will feed on a wide variety of trees, but tends to prefer maples, hickories, ash, and oak -- all of which are found in abundance throughout Fairfax County. The fall cankerworm caterpillars, the only life stage of this insect that causes damage to trees, emerge in early spring about the time of bud break and begin feeding almost immediately. Feeding continues throughout much of the spring until the mature caterpillars drop off the tree, enter the soil, and pupate.

Low level cankerworm infestations can cause nuisance problems due to the number of caterpillars and their droppings. With more severe infestations, defoliation can occur, resulting in stress to the trees and possible tree mortality. As in severe gypsy moth infestations, cankerworm infestations tend to be a severe nuisance to homeowners, making yards and patios unusable for several weeks in the spring. Outbreak phases usually last two or three years in succession and then decrease due to disease, predation, and parasitism. In some instances, however, populations do not decline and some type of control may be warranted. According to experts from the United States Forest Service, this insect thrives in older, mature forest stands that are under stress from external sources. Many older, suburban neighborhoods throughout the County, like those found in Mount Vernon and Lee Districts which are already infested, have this type of forest cover and are suitable locations for sustained outbreaks of the fall cankerworm.

The Forest Pest Program conducted a large aerial treatment program during the spring of 2000 for the fall cankerworm. The staff monitored for adult female moths throughout the Mount Vernon and Lee Districts starting in January, 2001. Results of this monitoring program indicated that the previous year's treatment was very effective. A selected ground spaying program was done in Spring 2001, with about 200 acres treated.

2. Riparian Projects

Stream bank erosion is a natural process that begins with water movement from uplands. In areas of urban development, impervious (watertight) surfaces replace vegetative soil coverings, resulting in less water soaking into the ground. As a result, more runoff flowing over land surfaces enters streams, causing excessive stream bank erosion.

Serious undercutting and sloughing of stream banks can occur when stream banks are not adequately protected by riparian vegetation. This stream bank erosion impacts water quality, causing serious problems for fish and wildlife as well as downstream landowners and communities. Thus, water quality and the flora and fauna associated with a healthy stream are closely linked. (See Chapter I, *Water Resources*, for more comments on water quality and stormwater management.)

Many methods exist to stabilize a stream bank. Traditionally, hard structures such as concrete and stone have been the quick fix. These methods may slow down the erosion

process but are costly, unattractive, and environmentally objectionable. Today, many engineers and contractors rely on *bioengineering* techniques, which involve the use of living plant materials to stabilize and rebuild soils and vegetation.

Some bioengineering techniques include:

Vegetation -- The stability of a stream bank depends on the establishment of permanent vegetation that can withstand water inundation as well as dry conditions. Live cuttings from willows, dogwoods, and other species that root quickly are incorporated into the soil. Root mass keeps soil in place, and the flexible leaves and branches slow down the flow of water.

Tree revetments -- Large whole trees anchored lengthwise along eroding banks with their bottom ends upstream and overlapping one another may provide continuous protection to the bank.

Biologs -- Biodegradable logs made of processed coconut husk fiber called "coir" can hold soils and plants in place. A biolog is generally eight to ten feet long and about one foot in diameter. The material is tough, flexible, and absorbent. By the time the "log" biodegrades in seven or eight years, a root network of plants has been established through and behind it.

With such innovative bioengineering techniques and proper planning and design, we can restore stream banks, reduce the amount of pollutants and sediment going into streams, improve animal and fish habitat, and create a more aesthetically pleasing environment.

The Fairfax County Park Authority, in conjunction with other agencies, has been involved with the following bioengineering projects:

- Bridle Path Stream Restoration Project in the Scotts Run Watershed -- The original proposal for this site included approximately 1,000 feet of gabions and other hard engineering stream channel structures. During design, bioengineering was found to be the most appropriate method of achieving stream stability. Design is now complete, with the Northern Virginia Soil and Water Conservation District having provided the final design. A large majority of the residents affected by this project have been expressing their opposition to the implementation of this project due to the proposed removal of several mature trees. FCPA and DPWES are continuing to work on this stream restoration project.
- A proposal to stabilize a portion of another unnamed tributary of Scotts Run is currently being reviewed. This new project is especially interesting in that it was proposed as part of a stormwater management waiver. A reach of tributary stream between a small infill development and the main stem of Scotts Run will be stabilized. This stabilization, of a severely downcut and degraded reach, will ensure that the channel is adequate to pass the existing and future volumes and

velocities of stormwater runoff without further degradation. This stability will reduce downstream pollutant loads through Scotts Run Stream Valley Park and Scotts Run Nature Preserve, and increase the habitat value of an existing natural area. If successful, this would be an excellent model of private-public cooperation that improves water quality and creates quality habitat while allowing infill development.

- Bryans Branch Stream Stabilization Project -- Natural Resource Conservation Service (NRCS), Department of Public Works and Environmental Services (DPWES), and the Park Authority have also been cooperating on what will probably be a more typical application of the fluvial geomorphological analysis/bioengineering process on Bryans Branch in McLean. The lower 2,500 feet of this stream have been severely eroded over the last 25 years. Two 100-foot bends of this stream are on the verge of undercutting the private road to Highland Swim Club and require emergency stabilization. However, funding shortfalls preclude stabilizing the entire stretch. The positive aspect of this project, despite the limits caused by partial funding, is that the entire stretch is being analyzed and the effects (exaggerated erosion on non-treated areas) which result from the emergency treatments will be projected and incorporated into a long term plan. Eventually, the majority of this stream reach will be stabilized using bioengineering techniques rather than rip-rap and gabions, which are required for the emergency underpinning of the road bank. Unfortunately, this stream stabilization project is now tabled indefinitely due to funding limitations. However, construction of the emergency road stabilization portion of the project was completed in the spring of 2000.

The Kingstowne Stream Restoration Project started in 1998 when Fairfax County, the Northern Virginia Soil and Water Conservation District (NVSWCD), the USDA Natural Resources Conservation Service, and two citizens groups (The Friends of Huntley Meadows Park and Citizens Alliance to Save Huntley) formed a partnership to use leading-edge technology to restore and stabilize a severely degraded stream channel to a natural, self-sustaining condition. This project is on land owned by the developers of Kingstowne and involves approximately 800 feet of a stream into which the runoff from Edison High School flows. The stream enters Greendale Golf Course shortly downstream from the project reach and was depositing significant amounts of sediments within a newly constructed stormwater management pond on the course. The material eroded from this channel over the last 25 years was also affecting the health of the Huntley Meadows Park wetlands. NVSWCD received a \$103,000 grant from the Virginia Water Quality Improvement Fund, the Fairfax County Board of Supervisors authorized \$200,000, and the USDA Natural Resources Conservation Service performed the engineering analysis and design for the project. The citizens' groups provided important local support.

The project used the principles of fluvial geomorphology and soil bioengineering techniques to create gentle meanders that slow the erosive velocity of the flow and natural vegetation to stabilize the stream banks. Erosion has been brought under control

and water quality downstream is improved. The stream passed its first test in December 1999 when it carried a bankfull storm event and performed as expected. Hopefully, this project will be the model for many others in Fairfax County.

A 150-foot segment of Wolfrap Run saw its severely eroded banks restored to a stable configuration in two days. Prior to restoration, the average height of the stream bank was five feet, and the angle was almost vertical to the water surface. After restoration, the bank had a gentle slope protected with biodegradable material, vegetation, and stone. NVSWCD, the Virginia Department of Forestry, and DPWES jointly designed and implemented this demonstration project that clearly shows how the "softer" environmentally sensitive engineering approach is more economical, less labor intensive, and more effective than the traditional methods of stabilizing eroded streams. Traditional engineering calls for pouring concrete into the channel, dumping huge amounts of rock in the stream, or putting gabions (wire grid baskets filled with stone) in the bank. The softer approach used bioengineering techniques.

One project being planned by the Lake Barcroft Watershed Improvement District (WID) is of great interest. For too long, Fairfax County has allowed the headwaters of streams to be piped. Now, the WID is proposing to open up a piped stream. In cooperation with the City of Falls Church, the WID proposes to resurface a short section of Tripps Run adjacent to a Falls Church park and school. The grant project can demonstrate the technique of surface stream restoration including problems, cost analysis, and environmental enhancement monitoring. Hopefully, this project will lead to more of the same in Fairfax County.

3. Urban Forestry

a. Urban Forestry Division

In past Annual Reports on the Environment, EQAC recommended that the staffing of the Urban Forestry Division be restored to the level that existed before budget cuts in 1996. In April 1998, the Board of Supervisors approved the addition of five Urban Forester II positions to the Division, and by the end of 1998, all of these positions were filled. This staff level is still short of levels that existed prior to July 1996. However, with the change in focus of the Urban Forestry Division from front-line staff to consultants to other County agencies, the current level of staffing seems to be working. The current staffing is now:

- (1) Division Director
- (1) Section Chief, Urban Forestry Section
- (8) Urban Forester II
- (1) Section Chief, Forest Pest Management Section
- (1) Naturalist II
- (3) Naturalist I
- (1) Secretary

This increased staffing and a re-focusing of duties by the Urban Forestry Division has resulted in a marked increase in work done in two critical areas: zoning cases and plan review and inspection. This increased participation in zoning case review has resulted in tangible improvements in the quality of tree preservation provided during the construction plan design phase, resulting in trees that are healthier, that are better placed to survive construction, and that provide greater overall benefits to the development and the surrounding community.

One of the most intensive projects undertaken by the Urban Forestry Division has been the preparation of draft amendments to the Zoning Ordinance, Public Facilities Manual (PFM), and the Subdivision Ordinance relating to tree preservation, tree planting and tree cover requirements.

Section 12 of the PFM has not received a comprehensive review since its adoption in the 1970s. The existing text includes a significant amount of information that no longer conforms to industry standards. Attempts to bring the standards up to date have resulted in information that is often difficult to follow. The draft amendments are easier to follow, and are in chronological order, from planning and design through the end of construction.

These draft amendments to Section 12 of the PFM seek to address concerns that have been raised by the Board of Supervisors, the development and engineering community, Tree Commission, Tree Preservation Task Force, County staff, and citizens concerning the present methods of calculating tree cover, interior parking lot landscaping, and other tree preservation and planting issues. They include:

- Increased incentives for tree preservation;
- Tree cover credit for seedling planting on two levels--one for reforestation and one for afforestation;
- The inclusion of simplified calculations for interior parking lot landscaping; and
- An overall update to comply with revised industry standards.

The work on Section 12 of the PFM was done by a small group of representatives from the development community, engineers, landscape architects, planners, citizens, and professional arborists. Work was done over a ten (10) month period, concluding in December, 1999. In May, 2001, the Tree Preservation Task Force unanimously endorsed the draft amendments to Section 12 of the PFM. They further recommended that County staff:

- Devise a tracking methodology to gauge the effectiveness of the draft amendments when they become part of the Code;
- Continue to work with the development community on modification of the proposed tree cover system; and

- List in the Public Facilities Manual those trees that are desirable for planting and encourage the use of native tree species over non-native.

The draft amendments will be presented to the Engineering Standards Review Committee. It is anticipated that the Planning Commission and Board of Supervisors will consider the draft amendment package for adoption in early 2002.

The Urban Forestry Division is currently involved in an effort to identify the percentage of the County's landmass that was covered with tree canopy during the years 1990, 1995 and 2000. This information will be derived through remote sensing techniques that use past and present satellite imagery. The quantification of past and present tree cover will be used to identify countywide tree cover percentages, to establish deforestation and afforestation trends, and to set future countywide tree cover goals.

In addition to quantifying tree cover levels, The Urban Forestry Division has received funding through an Urban and Community Forestry Grant to delineate the current geographical distribution of vegetation in the Northern Virginia area (Fairfax, Loudoun, and Arlington Counties and the City of Alexandria) using the United States Federal Geographic Data Committee (FGDC) Standard (FGDC-STD-005, 1997), National Vegetation Classification Standard. The classification will be conducted for 67 major watersheds within the study area.

The primary objective of the vegetation classification project is to provide private and public stakeholders with highly accurate Geographical Information System data that quantifies the historic and current extents and nature of Northern Virginia's forest, wetland, and water resources on an individual watershed basis.

Other objectives include:

1. To provide analytic tools and data that will allow stakeholders to identify and communicate the effects of urbanization trends on existing forest, wetland and water resources within the context of regional and local land-use planning processes;
2. To foster dialogue and collaboration between local stakeholders and encourage multi-jurisdiction efforts to accomplish the goals of the Chesapeake 2000 agreement; and
3. To establish baseline data necessary to formulate individual watershed management plans.

b. Tree Commission

The Tree Commission underwent a dramatic revitalization in 2001. Several standing subcommittees were set up to address community outreach and education.

These standing subcommittees will look at ways to interface in a more cohesive process with the public, business, local and county governments, schools, and homeowner associations to provide education regarding tree preservation, tree cover, and planting.

The Tree Commission was instrumental in relocating a specimen American Holly (*Ilex opaca*) to the Government Center. The tree was slated for destruction as part of a development project. Through the hard work of the Commission and County staff, the tree was moved and dedicated.

c. Open Space Preservation

As a result of EQAC's recommendation that the "County Board of Supervisors emphasize public-private partnerships that use private actions such as purchase of land and easement by existing or new land trusts to protect forests and other natural resources, including champion/historic trees," the Board of Supervisors directed staff to draft recommendations for a public-private partnership with the Northern Virginia Conservation Trust (NVCT). Under this agreement, NVCT would closely coordinate its easement efforts with the Fairfax County and Northern Virginia Regional Park Authorities. Both of these organizations also use easements for park purposes. In those instances where NVCT pursues easements on properties that adjoin parkland or serve park easements, the appropriate park authority would be given first consideration for holding these easements, as long as the property owner had no objections. To date, FCPA owns over 20,000 acres in the County, including sensitive land in the former D.C. Department of Corrections site in the Lorton area (now known as Laurel Hill) and in the western part of the County.

In addition to the formal public-private partnership with NVCT, the County continues to have informal working relationships with other land trusts. The Potomac Conservancy focuses its efforts on the protection of the natural, scenic, recreational, and historical qualities of the Potomac River Gorge. The Virginia Outdoors Foundation focuses on rural land conservation, and the Virginia Department of Historic Resources focuses on historic sites and properties.

4. Fairfax ReLeaf

Fairfax ReLeaf came into being in 1991 in response to severe losses of trees in Northern Virginia over the previous two decades. They are an independent, non-profit organization of volunteers who plant trees, improve community appearance, and restore habitat on public and common lands of Northern Virginia. They are involved in the following activities:

- Identification and planning of tree planting projects around Fairfax County and provision of the resources to accomplish those projects.

- Encouragement of urban forestry conservation practices by individuals, private organizations and state and local government.
- Provision of information and support for natural regeneration, mini-woodlands, and mow-free zones as alternatives to planned tree planting.
- Provision of information and assistance for selecting appropriate tree species for specific locations, where to obtain trees, proper tree planting techniques, and caring for newly planted and established trees.
- Promotion of public education on all aspects of urban forestry by providing knowledgeable speakers for meetings of civic groups and other community functions, and providing information to government for the establishment of sound public policy.

Fairfax ReLeaf can be reached through their web site, <http://www.geocities.com/RainForest/5663>

5. Fairfax County Park Authority

The Fairfax County Board of Supervisors created the Fairfax County Park Authority (FCPA) in 1950, authorizing the Park Authority Board to make decisions concerning land acquisition, park development, and operations. As a result, Fairfax County has a system of parks that serve a number of uses, including active recreation such as sports, historic sites and buildings, and environmentally sensitive areas such as forests and stream valley lands.

a. Acquisition of Park Land by FCPA

In 1998, Fairfax County voters approved a bond referendum giving the Fairfax County Park Authority \$75 million over the next six years. These funds are for land acquisition, facility development, and renovation projects. As part of this 1998 Park Bond Program, FCPA is acquiring properties that fall within one or more of the following categories:

- Parcels of 25 acres or more for active recreation;
- Land adjacent to existing parks that will expand recreational opportunities;
- Sites in high density areas of the County deficient in open spaces;
- Lands to protect significant natural and cultural resources; and
- Sites in the rapidly expanding areas of the County.

The Fairfax County Park Authority has done an outstanding job in the area of open space preservation and land acquisition. During FY 2000, the Park Authority acquired 2,056 acres of parkland (the highest land acquisition in any single year in FCPA history), bringing the total owned by the agency to 19,326 acres (as of July 1, 2000). As of October, 2001, the FCPA owned 20,230 acres of parkland. Of the nearly 738 acres of land acquired by FCPA in FY 2001, nearly 486 acres were

partly or fully funded by the Board of Supervisors. In FY 2001, FCPA passed the milestone of 20,000 acres of parkland owned.

b. Status of ERIC Data and Natural Resource Management Using GIS

The Fairfax County Park Authority staff continues to develop a Natural Resource Inventory for the County's park system. In the past, a partial attempt at building a Countywide Baseline Natural Resource Inventory was done by the Ecological Resources Inventory Committee (ERIC). Unfortunately, sufficient funding was not furnished to complete this task and the partially complete ERIC database languished. Eventually, with changes in computer hardware and software, this database became unusable. However, the ERIC data has now been successfully converted to the more modern and accessible MicroSoft Access Data Base, but has not yet been edited into a form compatible with the County's GIS program. The Park Authority staff continues to seek the \$15,000 needed to finish the conversion of this ERIC data.

Staff was able to present the Lake Accotink dredging program design consultant with Accotink Creek stream condition data and an associated GIS shape file for use in analysis of potential bedload and forebay requirements. A college intern collected this information several years ago, and a volunteer entered the data into a GIS. Having the information available in this form should allow detailed analysis by the consultants at much lower costs than would have been possible in the past.

Park Authority staff is working with the GIS team to develop data entry forms for directly entering natural resource inventory (NRI) information into a GIS accessible database. Over the past year, the agency performed several NRIs as part of master and re-master planning at parks around the County. As these inventory data sets are made available, management needs and alternatives will be easily displayed. When mapped, these NRIs will allow staff and citizens to make intelligent choices about suitable locations for facilities and natural resource areas.

c. Natural Resource Management Plan

In past reports, EQAC recommended that the County Board of Supervisors develop and implement a Countywide Natural Resource Management Plan. EQAC noted that in order to do this, two tasks need to be accomplished first: complete a Countywide Baseline Natural Resource Inventory and adopt a unified Natural Resource Conservation Policy. The above efforts by FCPA in recovering the ERIC data base and building a Natural Resource Inventory for the County's park will go a long way toward satisfying this EQAC recommendation. However, the FCPA effort needs to be expanded into a Countywide Natural Resource Inventory in order to identify all areas containing resources and habitat that needs to be protected.

EQAC's past recommendation on developing a Countywide Natural Resource Management Plan is also being partially fulfilled by FCPA. The FCPA staff is

working toward a final draft of its Natural Resource Management Plan (NRMP). This plan identifies the countywide and Park Authority programs and data sources related to natural resources and analyzes Park Authority policies and the Park Comprehensive Plan provisions affecting natural resources. It addresses natural resources management and planning on parklands within the general issues categories of Vegetation, Wildlife, Stormwater Management and Erosion Control, and Human Impact. EQAC continues to recommend that this FCPA effort be expanded Countywide.

d. Greenways Program

Implementation of the Greenways Program began in 1997 with the Park Authority staff working with citizens groups participating in the Parks Round Table partnership. FCPA continues to pursue the acquisition of property within the greenways and stream valley trails programs. The targeted stream valleys are those of Accotink, Difficult Run, Pimmit Run, and Turkeycock Run. As is the case with Environmental Quality Corridors (EQCs), the ecological boundaries of Greenways may include both public and private open space. Under voluntary cooperative resource management agreements, the Park Authority could offer technical assistance for enhancing the Greenway benefits of private property. This could include the land owner voluntarily granting conservation easements. Conservation easements have been used successfully by groups such as the Nature Conservancy to protect environmentally sensitive lands, and the Nature Conservancy has found that many landowners support the goal of preserving these environmentally sensitive lands.

During FY 2000, the Park Authority identified a route and a phasing plan for the 31.5-mile Cross County Trail. This will be a multi-modal trail using existing stream valley corridors and some existing trails and pathways from Pohick Road at Pohick Creek Stream Valley north to Great Falls on the Potomac River. Additionally, the Park Authority built or reconstructed 1.9 miles of trails.

EQAC notes that the Greenways Program is valuable in that it can expand the protection of environmentally sensitive stream valleys. However, this program should be aggressively expanded through the use of obtaining conservation easements, where possible, on private properties. As noted above, the Nature Conservancy has been successful in this approach. Additionally, the Northern Virginia Conservation Trust (NVCT) is now over six years old and can acquire conservation easements. The Northern Virginia Conservation Trust has now obtained a number of easements in Northern Virginia, showing that this approach in Fairfax County is feasible. The Board of Supervisors should continue its cooperation with NVCT and aggressively pursue easements aimed at protecting and preserving environmentally sensitive lands.

e. Wildlife Conflict Resolution and Management

Wildlife can cause adverse impacts, both in the County's parks as well as in residential neighborhoods. See Chapter IV of this report for a discussion on deer. Beaver activity can also cause adverse impacts. Their activities in stream valley parks can cause excessive losses of mature trees due to flooding. Additionally, beavers will often go into residential neighborhoods for trees. The Park Authority, through its Wildlife Conflict Resolution Policy, is working to mitigate these adverse impacts. Beaver are the most common source of wildlife complaints received by the FCPA. In 2000, the FCPA received more than 25 complaint calls; however, they were able to resolve all these calls without destroying any beaver.

FCPA continues to work to minimize the impact of Canada geese on park properties through humane non-lethal methods. Several golf courses have instituted controlled dog harassment programs, which prevents geese from establishing nests in the parks. Several parks have been addling eggs for three years, and the Federal permit to addle eggs has been extended to include all Park Authority properties. Addling eggs (coating eggs less than 14 days old with corn oil) will stop the egg from maturing, yet the parent goose will not lay another egg since it is still trying to hatch the addled egg. In 2000, over 750 eggs were addled from over 150 nests on Park Authority land. In the areas where addling has been used for several years, the number of nests per year has not substantially changed. However, the geese may be responding to the control efforts as the number of eggs per clutch has increased significantly. FCPA has also been working with Geese Peace Inc., a local non-profit community-based organization, sharing ideas and resources and providing information and logistical support.

f. Invasive Plant Control Efforts

Invasive plants are a problem because they can outcompete and replace native species. This change in vegetation disrupts the life cycles of many flora and fauna that depend on native vegetation. Huntley Meadows Park again received a grant (a \$39,200 matching grant) to be used for suppression and further research on *Microstigeum viminium*, also known as Japanese stilt grass, and *Berberis thunbergii*. This will be the third year in an ongoing active management program at Huntley Meadows that is providing valuable information for use at other sites around the County. The agency is also striving to use native plant species, whenever possible, to stabilize disturbed areas around new trails and other construction sites.

6. Agricultural and Forestal Districts

Landowners may apply to place their land in special Agricultural and Forestal (A&F) Districts that are taxed at reduced rates. A&F Districts that are created by the Commonwealth of Virginia must have 200 or more acres. A&F Districts of local significance, governed by the Fairfax County A&F District ordinance, must have at least 20 acres and must be kept in this status for a minimum of eight years.

Fairfax County's policy is to conserve and protect and to encourage the development and improvement of its important agricultural and forest lands for the production of food and other agricultural and forest products. It is also Fairfax County policy to conserve and protect agricultural and forest lands as valued natural and ecological resources, which provide essential open spaces for clean air sheds, watershed protection, wildlife habitat, aesthetic quality, and other environmental purposes. The purpose of the Local Agricultural and Forestal District program is to provide a means by which Fairfax County may protect and enhance agricultural and forest lands of local significance as a viable segment of the Fairfax County economy and as an important economic and environmental resource.

Currently, 45 Local and Statewide A&F Districts exist in Fairfax County, containing a total of about 4,212 acres. This is a decrease of two Local A&F Districts from 1999, and a total acreage decrease of about 150 acres. This is due to the following:

- Dranesville: Gain of one new Local A&F District, the Longacre Farm District and reduction in size by 15.15 acres of the Cajoll District
- Springfield: Loss of two Local A&F Districts due to the expiration of the Giliam District and the withdrawal of the Klare District. (The Klare District was purchased by the School Board as a school site.)
- Mt. Vernon: Lost of one Local A&F District due to the expiration of the Bloomer District.

7. Fairfax County Wetlands Board and DEQ Wetlands Activities

Fairfax County staff reviewed approximately 20 Joint Permit Applications to determine if permits were required from the Wetlands Board during 2000. The Wetlands Board evaluated and approved two shoreline erosion control projects during the 2000-2001 fiscal year. In January, 2000, the Fairfax County Board of Supervisors adopted an amendment to Chapter 116 of the Code of Fairfax County, the Wetlands Ordinance, to increase the wetlands permit fee from \$50 to \$300.

During 2000, DEQ received 17 Joint Permit Applications for proposed activities in Fairfax County. Of these 17, ten did not require permits from DEQ. Those ten dealt with either pier construction, maintenance on water mains, rip-rap construction, construction of utility lines, or wetland impacts that were authorized by U.S. Army Corps of Engineers' Nationwide permits for which DEQ had already provided 401 Certification. DEQ did issue waivers for two of the remaining projects. Both of these projects were waived because the wetland bank credits were purchased prior to the taking of wetland impacts.

The Dulles Airport 2000 project will permanently impact approximately eight acres of the waters of the United States, including wetlands. Approximately 4.23 acres of palustrine emergent wetlands, 2.96 acres of palustrine forested wetlands, and 0.84 acres

of streambed will be impacted. Mitigation for the project is the purchase of mitigation credits (10.99 credits) from the North Fork Wetlands Bank.

The Lorton South property is a commercial development with permanent impacts of 1.28 acres, including 1.06 acres of palustrine forested wetlands, 0.1 acres of palustrine emergent wetland, and 0.11 acres of intermittent stream channel. Mitigation for the project is the purchase of 2.3 acres credits at the North Fork Wetland Bank.

8. South Van Dorn Street Phase III Road Project

The U.S. Army Corps of Engineers issued a permit for the construction of South Van Dorn Street Phase III on May 28, 1996. The permit requires that no construction can start on the roadway until four conditions are completed. Three of these conditions are aimed at protecting Huntley Meadows Park.

One condition is that seven parcels of land (102 acres) adjacent to Huntley Meadows Park must be purchased by Fairfax County. This is in lieu of creating wetlands for the five acres of wetlands that will be destroyed in road construction. These 102 acres contain about 69 acres of wetlands and 33 acres of uplands. This action will ensure preservation of the wetlands contained in this 102-acre tract as well as provide a valuable addition to Huntley Meadows Park. Land acquisition has been initiated for these seven parcels. The County has made offers to all the property owners, and County staff is negotiating with these property owners. However, due to difficulties in negotiating with at least one property owner, the Board of Supervisors, on March 5, 2001, authorized using quick-take condemnation under their powers of eminent domain. Once all other conditions are satisfied, the County will acquire the property using quick-take condemnation unless the property owners have agreed to sell.

Another condition is that stormwater management improvements must be accomplished in the Dogue Creek watershed. This includes construction of two new ponds, retrofitting existing ponds, removing silt from existing ponds, and expanding one existing pond. The stormwater management improvements have been funded for design and construction. The Kingstowne developer, in a cooperative effort with the Fairfax County Park Authority, constructed one of these new stormwater management ponds on Greendale Golf Course as a proffer associated with his development. All ponds are now complete with one exception. That pond is designed and construction should be complete by the spring of 2002.

The third condition is that Fairfax County must post a performance bond to monitor and maintain the stormwater management ponds for a period of ten years after construction. Fairfax County must also submit a monitoring plan for the Dogue Creek watershed that is to be approved by the Corps. Fairfax County submitted this plan and it is under review by the Corps. In late summer, 2001, the Corps provided draft comments on the plan to the County and the County will respond before the winter of 2001-2002.

The Corps of Engineers permit for the road construction is valid until December 31, 2004. The County intends to implement these conditions prior to this time. At the present time, it appears that all conditions will be satisfied by the winter of 2001-2002 or the spring of 2002 -- at which time road construction will start.

C. RECOMMENDATIONS

1. EQAC recommends that the County Board of Supervisors develop and implement a Countywide Natural Resource Management Plan -- an ecological resources management plan that can be implemented through the policy and administrative branches of the County government structure. Two necessary tasks should be accomplished first -- prepare and adopt a unified Natural Resource Conservation Policy, and complete a Countywide Baseline Natural Resource Inventory. The Plan will also require that the Board of Supervisors reinstate funding for the Ecological Resources Inventory Committee. This is a continuing recommendation from past years. EQAC notes that progress is being made in this area due to efforts by the Fairfax County Park Authority staff in their efforts to establish a natural resources baseline inventory. The Park Authority is also preparing a Natural Resources Plan, scheduled for completion in the near future. EQAC fully supports these efforts, urging that they culminate in a Countywide Resource Management Plan. This is a continuing recommendation from past EQAC reports. EQAC's intent is that Fairfax County should have all the tools in place (the policy and the data) to create a plan that will support the active management and conservation of the County's natural resources.
2. EQAC recommends that the County Board of Supervisors emphasize public-private partnerships that use private actions such as purchase of land and easement by existing or new land trusts to protect forests and other natural resources, including champion/historic trees. This is a continuing recommendation from previous years. Both the Fairfax County Park Authority and the Department of Planning and Zoning support this recommendation. EQAC also notes that, with the passage of Open Space Lands Preservation Trust Fund by the State, funds are available to defray landowners' costs of setting up conservation easements. EQAC notes that the Board of Supervisors will be funding the Northern Virginia Conservation Trust (NVCT) in FY 2002 after entering into a public-private partnership between the BOS and NVCT. EQAC notes that if this action is completed, and the resulting program is an aggressive program, EQAC's recommendation should be satisfied.
3. EQAC recommends that the topic of land preservation through easements continue to be publicized on the County's web site and through publications available in magisterial government offices as well as the County Government Center offices.

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